



SPP

*Southwest
Power Pool*

***System Impact Study
SPP-2013-011
For Transmission Service
Requested By:
SPSM***

From SPS to EDDY

***For a Reserved Amount Of
100 MW
From 6/1/2013
To 7/1/2013***

1. Executive Summary

SPSM has requested a system impact study for monthly firm transmission service from SPS to EDDY. The period of the transaction is from 6/1/2013 00:00 to 7/1/2013 00:00. The request is for reservation 78253102

The 100 MW transaction from SPS has an impact on the following flowgates with no AFC: SPSNORTH_STH, OSGCANBUSDEA, and POTXFRHITXFR. To provide the AFC necessary for this transfer, the impact on these flowgates must be relieved.

After studying many scenarios using generation redispatch, there are several feasible scenarios that will relieve the flowgate(s) in question.

2. Introduction

SPSM has requested a system impact study for transmission service from SPS to EDDY.

There are 3 constrained flowgates that require relief in order for this reservation to be accepted. The flowgates and the explanations are as follows:

- SPSNORTH_STH: SPS North to South stability.
- OSGCANBUSDEA: Osage – Canyon 115 kV line for the loss of the Bushland – Deaf Smith 230 kV line.
- POTXFRHITXFR: Potter 345/230 kV transformer for the loss of the Hitchland 345/230 kV transformer.

3. Study Methodology

A. Description

Southwest Power Pool used Transmission Adequacy & Reliability Assessment (TARA) to obtain possible unit pairings that would relieve the constraint. TARA calculates impacts on monitored facilities for all units within the Southwest Power Pool Footprint. The SPP ATC Calculator is used to determine response factors for the time period of the reservation.

B. Model Updates

The 2013 Southwest Power Pool model was used for the study. This model was updated to reflect the most current information available.

C. Transfer Analysis

Using the short-term calculator, the limiting constraints for the transfer are identified. The response factor of the transfer on each constraint is also determined.

The product of the transfer amount and the response factor is the impact of a transfer on a limiting flowgate that must be relieved. With multiple flowgates affected by a transfer, relief of the largest impact may also provide relief of smaller impacts.

Using Transmission Adequacy & Reliability Assessment (TARA), specific generator pairs are chosen to reflect the units available for redispatch. The quotient of the amount of impact that must be relieved and the generation sensitivity factor calculated by TARA is the amount of redispatch necessary to relieve the impact on the affected flowgate.

4. Study Results

After studying the impacts of the request, three flowgates require relief. The flowgates and associated amount of relief are as follows:

Table 1

Flowgate	Duration	Sensitivity(%)	Required Relief (MW)
5196 : SPSNORTH_STH	6/1/2013 - 7/1/2013	30.2%	30
5371 : OSGCANBUSDEA	6/1/2013 - 7/1/2013	5.6%	6
5420 : POTXFRHITXFR	6/1/2013 - 7/1/2013	5.4%	5

Table 2 displays a list of generator pairs that are possible relief options for each flowgates in question and the amount of redispatch capacity needed.

Table 2

5196 : SPSNORTH_STH			
Increment	Decrement	Sensitivity	MW
Plant X	Harrington	90.3%	33
Plant X	Nichols	90.2%	33
Tolk	Harrington	90.0%	33
Tolk	Nichols	89.8%	33
Plant X	Blackhawk	89.5%	34
Tolk	Blackhawk	89.1%	34
Cunningham	Harrington	88.7%	34
Maddox	Harrington	88.7%	34
Hobbs	Harrington	88.7%	34
LCEGASPLANT	Harrington	88.7%	34
Mustang	Harrington	88.6%	34
Cunningham	Nichols	88.6%	34
Maddox	Nichols	88.6%	34
Hobbs	Nichols	88.6%	34
LCEGASPLANT	Nichols	88.5%	34
Mustang	Nichols	88.4%	34

5371 : OSGCANBUSDEA			
Increment	Decrement	Sensitivity	MW
Plant X	Nichols	15.4%	39
Tolk	Nichols	14.8%	41
Plant X	Blackhawk	14.6%	41
Plant X	Harrington	14.6%	41
Tolk	Blackhawk	14.0%	43
Tolk	Harrington	14.0%	43
Cunningham	Nichols	13.9%	43
Maddox	Nichols	13.9%	43
Hobbs	Nichols	13.9%	43
Mustang	Nichols	13.8%	44
Cunningham	Blackhawk	13.2%	46
Maddox	Blackhawk	13.2%	46
Hobbs	Blackhawk	13.2%	46
Cunningham	Harrington	13.1%	46
Maddox	Harrington	13.1%	46
Hobbs	Harrington	13.1%	46
Mustang	Blackhawk	13.0%	46
Mustang	Harrington	13.0%	46
Jones	Nichols	11.6%	52
Jones	Blackhawk	10.9%	55
Jones	Harrington	10.8%	55

5420 : POTXFRHITXFR			
Increment	Decrement	Sensitivity	MW
Harrington	LP Brandon/Massengale/Cooke	6.0%	83
Harrington	Jones	6.0%	84
Nichols	LP Brandon/Massengale/Cooke	5.4%	93
Nichols	Jones	5.3%	94
Blackhawk	LP Brandon/Massengale/Cooke	5.3%	95
Blackhawk	Jones	5.2%	96
Harrington	Mustang	4.6%	110
Harrington	Hobbs	4.5%	111
Harrington	Maddox	4.5%	111
Harrington	Cunningham	4.5%	112
Nichols	Mustang	3.9%	128
Nichols	Hobbs	3.8%	130
Nichols	Maddox	3.8%	130
Nichols	Cunningham	3.8%	130

5. Conclusion

Generation redispatch options were studied in order to relieve the necessary constraints. The results of this study shows that the constraints on the flowgates in question could be relieved by executing one or more of the options described in the Study Results section of this document. Before the Transmission Provider accepts the reservations, proof of the necessary relief options must be presented to Southwest Power Pool. Noncompliance with this guideline will result in the refusal of the reservation.